What is claimed is:

1. An image processing method, comprising:

performing sharpness enhancement processing on an image signal,

picking up an image through sampling in a predetermined sampling pattern to acquire an image signal representing the image, and

appending sampling information, which concerns the predetermined sampling pattern, to the image signal, which has been acquired,

wherein different sharpness enhancement processing is performed on the image signal and in accordance with the sampling information to obtain a processed image signal.

2.   The image processing method as defined in Claim 1 wherein the different sharpness enhancement processing is a processing in accordance with frequency characteristics of the image signal, which has been acquired, due to the sampling pattern.

3. An image processing apparatus, comprising:

processing means for performing sharpness enhancement processing on an image signal,

means for picking up an image through sampling in a predetermined sampling pattern to acquire an image signal representing the image, and

sampling information appending means for appending sampling information, which concerns the

predetermined sampling pattern, to the image signal, which has been acquired,

wherein the processing means performs different sharpness enhancement processing on the image signal and in accordance with the sampling information to obtain a processed image signal.

4. The image processing apparatus as defined in Claim 3 wherein the processing means performs, as the different sharpness enhancement processing, a processing in accordance with frequency characteristics of the image signal, which has been acquired, due to the sampling pattern.

5. A recording medium, on which a program for causing a computer to execute an image processing method has been recorded and from which the computer is capable of reading the program, the image processing method comprising:

performing sharpness enhancement processing on an image signal,

picking up an image through sampling in a predetermined sampling pattern to acquire an image signal representing the image, and

appending sampling information, which concerns the predetermined sampling,

wherein the program comprises the procedure for:

performing different sharpness enhancement processing on the image signal and in accordance with the sampling information to obtain a processed image signal.

6.   The recording medium as defined in Claim 5, wherein the procedure for obtaining the processed image signal is a procedure for performing, as the different sharpness enhancement processing, a processing in accordance with frequency characteristics of the image signal, which has been acquired, due to the sampling pattern.

7.   An image transforming method, comprising the step of performing transforming processing on a square sampling image signal, which has been obtained from a checkered sampling image signal by performing a predetermined interpolating operation process on the checkered sampling image signal to form signal values corresponding to empty pixel positions in an array of pixels represented by image signal components of the checkered sampling image signal,

        wherein the transforming processing is a processing for performing an interpolating operation process, which is different from the predetermined interpolating operation process, on the square sampling image signal to form new signal values corresponding to the empty pixel positions, in lieu of the signal values having been formed with the predetermined interpolating operation process, and thereby to obtain a new square sampling image signal.

8.   The image transforming method as defined in Claim 7, wherein the different interpolating operation process is an interpolating operation process, in which a filtering process is performed on signal values of the square sampling image signal other than the signal values having been formed with the predetermined

interpolating operation process, the filtering process being performed with an interpolation filter having an array of filter factors obtained by rotating an array of filter factors in a N×M high order interpolation filter,

5   where at least either one of N and M is at least 3, by an angle of 45 degrees.

          9. The image transforming method as defined in Claim 8, wherein the filter factors are filter factors

10   of a 4×4 interpolation filter for performing a cubic spline interpolating operation process.

          10. The image transforming method as defined in Claim 7, wherein sampling information, which represents

15   whether an image represented by an original image signal has been picked up through checkered sampling or square sampling, is appended to the square sampling image signal, and

          the processing for performing the different

20   interpolating operation process to obtain the new square sampling image signal is performed only in cases where it has been discriminated in accordance with the sampling information that the image has been picked up through the checkered sampling.

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          11. An image transforming apparatus, comprising transforming processing means for performing transforming processing on a square sampling image signal, which has been obtained from a checkered

30   sampling image signal by performing a predetermined interpolating operation process on the checkered sampling image signal to form signal values corresponding to empty pixel positions in an array of

pixels represented by image signal components of the checkered sampling image signal,

wherein the transforming processing means performs the transforming processing for performing an interpolating operation process, which is different from the predetermined interpolating operation process, on the square sampling image signal to form new signal values corresponding to the empty pixel positions, in lieu of the signal values having been formed with the predetermined interpolating operation process, and thereby to obtain a new square sampling image signal.

12. The image transforming apparatus as defined in Claim 11, wherein the different interpolating operation process performed by the transforming processing means is an interpolating operation process, in which a filtering process is performed on signal values of the square sampling image signal other than the signal values having been formed with the predetermined interpolating operation process, the filtering process being performed with an interpolation filter having an array of filter factors obtained by rotating an array of filter factors in a N×M high order interpolation filter, where at least either one of N and M is at least 3, by an angle of 45 degrees.

13. The image transforming apparatus as defined in Claim 12, wherein the filter factors are filter factors of a 4×4 interpolation filter for performing a cubic spline interpolating operation process.

14. The image transforming apparatus as defined in Claim 11, wherein sampling information, which represents

whether an image represented by an original image signal
has been picked up through checkered sampling or square
sampling, is appended to the square sampling image
signal,

5   the apparatus further comprises discrimination
means for discriminating in accordance with the sampling
information whether the image has been picked up through
the checkered sampling or not, and

          the transforming processing means performs the
10   processing for performing the different interpolating
operation process to obtain the new square sampling
image signal only in cases where it has been
discriminated by the discrimination means that the image
has been picked up through the checkered sampling.

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     15.   A recording medium, on which a program for
causing a computer to execute an image transforming
method has been recorded and from which the computer is
capable of reading the program, the image transforming
20   method comprising performing transforming processing on
a square sampling image signal, which has been obtained
from a checkered sampling image signal by performing a
predetermined interpolating operation process on the
checkered sampling image signal to form signal values
25   corresponding to empty pixel positions in an array of
pixels represented by image signal components of the
checkered sampling image signal,

          wherein the program comprises, as the
procedure for performing the transforming processing, a
30   procedure for performing a processing for performing an
interpolating operation process, which is different from
the predetermined interpolating operation process, on
the square sampling image signal to form new signal

values corresponding to the empty pixel positions, in lieu of the signal values having been formed with the predetermined interpolating operation process, and thereby to obtain a new square sampling image signal.

16. The recording medium as defined in Claim 15, wherein the different interpolating operation process is an interpolating operation process, in which a filtering process is performed on signal values of the square sampling image signal other than the signal values having been formed with the predetermined interpolating operation process, the filtering process being performed with an interpolation filter having an array of filter factors obtained by rotating an array of filter factors in a N×M high order interpolation filter, where at least either one of N and M is at least 3, by an angle of 45 degrees.

17. The recording medium as defined in Claim 16, wherein the filter factors are filter factors of a 4×4 interpolation filter for performing a cubic spline interpolating operation process.

18. The recording medium as defined in Claim 15, wherein sampling information, which represents whether an image represented by an original image signal has been picked up through checkered sampling or square sampling, is appended to the square sampling image signal,

the program further comprises the procedure for discriminating in accordance with the sampling information whether the image has been picked up through the checkered sampling or not, and

the procedure for performing the transforming processing is a procedure for performing the processing for performing the different interpolating operation process to obtain the new square sampling image signal only in cases where it has been discriminated by the procedure for the discrimination that the image has been picked up through the checkered sampling.

19. An image transforming method, comprising the step of transforming a checkered sampling image signal into a square sampling image signal,

wherein the checkered sampling image signal is transformed into the square sampling image signal by performing a filtering process on the checkered sampling image signal and with an interpolation filter, which has an array of filter factors obtained by rotating an array of filter factors in a N×M high order interpolation filter, where at least either one of N and M is at least 3, by an angle of 45 degrees.

20. The image transforming method as defined in Claim 19, wherein the filter factors are filter factors of a 4×4 interpolation filter for performing a cubic spline interpolating operation process.

21. An image transforming apparatus, comprising transforming means for transforming a checkered sampling image signal into a square sampling image signal,

wherein the transforming means transforms the checkered sampling image signal into the square sampling image signal by performing a filtering process on the checkered sampling image signal and with an interpolation filter, which has an array of filter

factors obtained by rotating an array of filter factors in a N×M high order interpolation filter, where at least either one of N and M is at least 3, by an angle of 45 degrees.

22. The image transforming apparatus as defined in Claim 21, wherein the filter factors are filter factors of a 4×4 interpolation filter for performing a cubic spline interpolating operation process.

23. A recording medium, on which a program for causing a computer to execute an image transforming method has been recorded and from which the computer is capable of reading the program, the image transforming method comprising transforming a checkered sampling image signal into a square sampling image signal,
wherein the program comprises the procedure , for:
transforming the checkered sampling image signal into the square sampling image signal by performing a filtering process on the checkered sampling image signal and with an interpolation filter, which has an array of filter factors obtained by rotating an array of filter factors in a N×M high order interpolation filter, where at least either one of N and M is at least 3, by an angle of 45 degrees.

24. The recording medium as defined in Claim 23, wherein the filter factors are filter factors of a 4×4 interpolation filter for performing a cubic spline interpolating operation process.